WHAT IS CLAIMED IS:

1. A control device for a synchronous motor, comprising:

a rotational position detector for detecting a rotational position of a synchronous motor;

an angular rate computing unit for determining a rotational angular rate from the rotational position;

a current instruction generator for determining a d-axis current instruction and a q-axis current instruction from the rotational angular rate and a torque instruction;

a three-phase to two-phase converter for converting three-phase currents flowing into the synchronous motor into a d-axis current and a q-axis current;

a current controller for determining a d-axis voltage instruction and a q-axis voltage instruction from a difference between the d-axis current instruction and the d-axis current and a difference between the q-axis current instruction and the q-axis current;

a phase computing unit for determining a rotor positional angle from an output from the rotational position detector;

a voltage converter for determining three-phase voltage instructions based on the rotor positional angle, the d-axis voltage instruction, and the q-axis voltage instruction;

a phase correction quantity detector for determining the amount of offset in which the d-axis voltage instruction becomes

zero when the phase correction instruction is inputted and the d-axis voltage instruction is not zero, and turning off phase correction instruction when the phase correction instruction is inputted and the d-axis voltage instruction is zero; and

an adder for adding the amount of offset to the rotor positional angle to determine a fresh rotor positional angle, and outputting the fresh rotor positional angle to the voltage converter,

wherein, when the phase correction instruction is inputted,

the current instruction generator sets the d-axis current instruction and the q-axis current instruction as zero;

the current controller determines the d-axis voltage instruction and the q-axis voltage instruction from the difference between the d-axis current instruction which is set as zero and the d-axis current, and the difference between the q-axis current instruction which is set as zero and the q-axis current;

the phase correction quantity detector determines the amount of offset in which the d-axis voltage instruction becomes zero when the d-axis voltage instruction is not zero; and

the adder adds the rotor positional angle and the amount of offset to determine the fresh rotor positional angle in which the d-axis voltage instruction becomes zero, thereby correcting a deviation produced between the rotational position of the synchronous motor which is determined from the output from the

rotational position detector and an actual rotational position of the synchronous motor.

2. A control device for a synchronous motor according to claim 1, wherein the phase correction quantity detector determines the amount of offset in which the d-axis voltage instruction becomes zero by successively increasing or decreasing the amount of offset.

3. A control device for a synchronous motor according to claim 1, wherein the phase correction quantity detector determines the amount of offset from the d-axis voltage instruction and the q-axis voltage instruction.

4. A control device for a synchronous motor according to claim 1, wherein the phase correction quantity detector comprises a correction quantity storing section for storing the determined amount of offset, and outputs the stored amount of offset at reactivation of the control device.

5. A control device for a synchronous motor according to claim 1, wherein the synchronous motor is an activation device for an internal combustion engine, and the control device for a synchronous motor corrects the deviation in rotational position after the internal combustion engine is activated by the synchronous motor.

6. A control device for a synchronous motor according to claim 1, wherein

the synchronous motor is an activation device for the internal combustion engine in which an additional activation motor is provided,

and first activation is performed on the internal combustion engine by the activation motor ,

the control device for a synchronous motor correcting the deviation in rotational position while the internal combustion engine is activated or the internal combustion engine is operated.

7. A rotational position deviation correcting method of correcting a deviation produced between a rotational position of a synchronous motor which is determined from an output of a rotational position detector for the synchronous motor on which vector control is performed and an actual rotational position of the synchronous motor, the method comprising:

inputting a phase correction instruction for instructing correction of the deviation in rotational position when the deviation in rotational position is corrected;

disabling a torque instruction to set a d-axis current instruction and a q-axis current instruction as zero;

converting three-phase current values of the synchronous

motor into a d-axis current and a q-axis current;

determining a difference between the d-axis current instruction and the d-axis current and a difference between the q-axis current instruction and the q-axis current;

determining a d-axis voltage instruction and a q-axis voltage instruction based on the differences;

judging whether or not the determined d-axis voltage instruction is zero, determining the amount of offset in which the d-axis voltage instruction becomes zero when the d-axis voltage instruction is not zero, and turning off the phase correction instruction when the d-axis voltage instruction is zero;

adding a rotor positional angle determined by integrating the output of the rotational position detector and the amount of offset to determine an additional value; and

determining three-phase voltage instructions to be supplied to an inverter based on the additional value, the d-axis voltage instruction, and the q-axis voltage instruction.

8. A rotational position deviation correcting method according to claim 7, wherein determining the amount of offset includes determining the amount of offset in which the d-axis voltage instruction becomes zero by successively increasing or decreasing the amount of offset.

9. A rotational position deviation correcting method according to claim 7, wherein determining the amount of offset includes determining the amount of offset from the d-axis voltage instruction and the q-axis voltage instruction.

10. A rotational position deviation correcting method according to claim 7, wherein determining the amount of offset includes storing the determined amount of offset and outputting the stored amount of offset at reactivation of the synchronous motor.